

REMARKS

In this Office Action, claims 6 and 8-14 were rejected under 35 U.S.C. §102(e) as being anticipated by US Patent No. 6,075,814 to Yamano, et al. ("Yamano"). Claims 1-5 were rejected under 35 U.S.C. §103(a) as being unpatentable over US Patent No. 6,426,961 to Nimmagadda ("Nimmagadda") in view of Yamano and US Patent No. 6,665,350 to Bartkowiak ("Bartkowiak"). Claim 7 was rejected under 35 U.S.C. §103(a) as being unpatentable over Yamano in view of US Patent No. 6,353,628 to Wallace, et al. ("Wallace"). The Examiner is thanked for a thorough examination of the application.

In the present Amendment, independent claims 5, 6, 10, and 12 are amended to further clarify the invention. Dependent claim 11 has been amended to correct a matter of form.

Applicants respectfully traverse the rejection of independent claim 1. As recited in claim 1, a method for operating data transmission devices is provided where only a signal detector is used when data is not being transmitted ("outside a context of data transmission, operating only a signal tone detector") and where other parts of the devices are operated only when a pilot tone is received ("operating remaining parts of the high-bit-rate data transmission devices only when the signal tone detector detects the occurrence of a pilot tone"). As disclosed in the specification, the detection of a pilot tone indicates the beginning of data transmission (page 7, paragraph 3). Power consumption by the data transmission devices is minimized because a pilot tone must be detected before any devices other than the signal tone detector are operable.

In the Office Action, the Examiner argues that independent claims 1 and 5 are unpatentable over Nimmagadda in view of Yamano and Bartkowiak. In particular, the Examiner

asserts that Bartkowiak discloses a tone detector that combines the functions of A/D conversion, sampling, and tone detection in one device. Furthermore, the Examiner asserts that the combination of the teachings of Bartkowiak and Yamano indicate that it would have been obvious to one of ordinary skill in the art to modify the circuit of Yamano (item 400, Figure 4) wherein the non-idle detector (item 401, Figure 4, of Yamano), A/D converter, and sample buffer are embodied in one tone detector component, as allegedly taught by Bartkowiak.

In the Office Action, the Examiner acknowledges that Nimmagadda does not teach an ADSL system in which only a signal tone detector is operable when data is not transmitted. The Examiner further acknowledges that Yamano teaches that an A/D converter and sample buffer are *operative when data is not being transferred*. Thus, the combination of Nimmagadda and Yamano provide no suggestion of the feature of the present invention, where, when data is not being transmitted “only a signal tone detector” is operative.

Applicants submit, moreover, that the further combination of Bartkowiak with Yamano and Nimmagadda does not teach or suggest the feature of the present invention recited in claim 1, where, when data is not being transmitted “only a signal tone detector” is operative. As an initial matter, applicants respectfully submit that Bartkowiak does not disclose combining an A/D converter, sample buffer, and tone detector of Yamano in one device, as asserted by the Examiner. In Figure 2 of Bartkowiak, a device is disclosed having an *analog* waveform sampler (item 202, Figure 2a), a quantizer of analog samples (item 206), and a tone detector (235). Sampler 202 of Bartkowiak is directed towards periodically sampling *analog* wave signals. In contrast, sample buffer 308 (Figure 3) of Yamano is a FIFO buffer that stores *digital* signals

provided to it from the circuit. Thus, the digital sample buffer of Yamano performs an entirely distinct function in comparison to the analog sampler of Bartkowiak. Accordingly, Bartkowiak cannot teach the combining of a tone detector, A/D converter and sample buffer of Yamano.

As a second matter, the Examiner asserts that motivation for combining the sample buffer, A/D converter, and non-idle detector into one device is that they provide the necessary functions for a tone detector to work. However, neither Bartkowiak nor Yamano teach that both a *sample buffer* and A/D converter must be added to a non-idle detector (tone detector) for the detector to detect the tone. As noted above, Bartkowiak does not teach the sample buffer of Yamano. As disclosed in Yamano, sample buffer 308 is a FIFO buffer that stores digital output (column 7, line 51-53). However, nowhere does Yamano teach that the sample buffer must be used for the non-idle detect element 401 to operate. On the contrary, Yamano (column 11, lines 53-58) states “ If receiver circuit 300 fails to detect a transition from an idle state to a DATA state. . . the modem protocol. . . would merely request retransmission of the initial data throughput. The end result is a brief degradation in data throughput.” Thus, Yamano falls far short of teaching that a sample buffer, A/D converter and non-idle detector must all be used for the tone (non-idle) detector to operate. Accordingly, one of ordinary skill in the art would not have motivation to combine the said elements into one tone detector. Thus, because adder 319 and buffer 308 are elements distinctly operable apart from non-idle detector 401, and Yamano provides no teaching that they are separately disabled in an idle period, Yamano in view of Bartkowiak does not suggest that elements such as adder 319 and buffer 308 are inoperable during an idle period.

As a final matter, even if the features of sample buffering, A/D conversion, and tone detection in one device in circuit, Yamano does not teach that “only a signal tone detector” is operative when data is not being transmitted. Even were the above three functions combined to be equivalent of non-idle detector 401 of Yamano, and equated with the signal tone detector of the present invention, Yamano does not teach that *all* the other circuit elements are inoperative when data is not being transmitted, whereby “only a signal tone detector” operates. For example, Yamano fails to teach or suggest that adder 319 is inoperative under a “reduced processing” mode (see column 14). Moreover, nowhere does Yamano suggest that only the non-idle detector remains operable in the “reduced processing” mode.

It follows then, for the reasons outlined above, that the combination of Yamano and Bartkowiak fail to teach or fairly suggest a method for operating data transmission devices where *only* a signal detector is used when data is not being transmitted (an idle period).

A defining aspect of the present invention as defined in amended claim 5 is an arrangement for operating data transmission devices having a signal tone detector “wherein only the signal tone detector is operable when data is not being transmitted.” For the same reasons stated above in the case of claim 1, taken singly or in combination, Nimmagadda, Yamano, and Bartkowiak fail to teach or suggest an arrangement containing a signal tone detector “wherein *only* the signal tone detector is operable when data is not being transmitted.”

In the present Amendment, claim 6 has been amended to recite a method for operating data transmission devices, “wherein all components of the high-bit-rate transmission device other than the signaling tone detector are inoperative when data transmission does not occur.”

Similarly, amended claim 10 recites a data transmitting system comprising a signal tone detector where "all other components . . . are inoperative when data transmission does not occur."

Finally, amended claim 12 recites a data transmission device containing a signal tone detector and "a plurality of components other than the signaling tone detector . . . wherein all components of the plurality of components other than the signaling detector are inoperative when data transmission does not occur." Based on the reasons stated above, Applicants submit that the prior art of record does not teach or suggest the feature of the present invention recited in independent claims 6, 10, and 12, wherein *all devices other than the signal tone detector* are inoperative when data transmission does not occur.

In light of the foregoing, applicants respectfully submit that, upon entry of the present Amendment, independent claims 1, 5, 6, 10, and 12 will be in condition for allowance. Additionally, at least because of their dependence on allowable claims, the remaining dependent claims are also believed to be allowable.

Should the Examiner have any questions or determine that any further action is desirable to place this application in even better condition for issue, the Examiner is encouraged to telephone applicants' undersigned representative at the number listed below.

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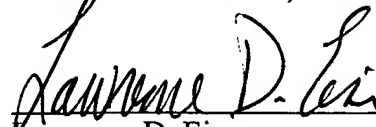
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Respectfully submitted,

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